

**WHAT IS CLAIMED IS:**

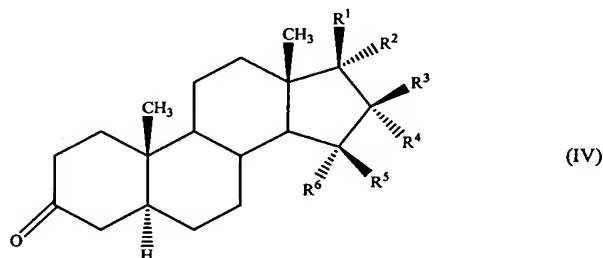
1. A process for the production of a 2-oxa-3-one androstane derivative, the process comprising reacting a 3-one androstane derivative with ozone to form a 2-oxa-3-one androstane derivative.
2. The process of claim 1, wherein the reaction is conducted in the presence of an organic or inorganic peroxide.
3. The process of claim 2, wherein the peroxide is hydrogen peroxide.
4. The process of claim 1, wherein the reaction is carried out in a temperature range from about 1° C to about 50° C.
5. The process of claim 1, wherein the 3-one androstane derivative is reacted with ozone for about 3 hours to about 5 hours.
6. The process of claim 1, wherein the ozone that is reacted with the 3-one androstane derivative is present as a mixture of oxygen and ozone.
7. A process for the production of oxandrolone, the process comprising reacting mestanolone with ozone to form oxandrolone.
8. The process of claim 7, wherein the reaction is conducted in the presence of an organic or inorganic peroxide.
9. The process of claim 8, wherein the peroxide is hydrogen peroxide.
10. The process of claim 7, wherein the reaction is carried out in a temperature range from about 1° C to about 50° C.
11. The process of claim 7, wherein the mestanolone is reacted with ozone for about 3 hours to about 5 hours.

12. The process of claim 7, wherein the ozone that is reacted with the mestanolone is present as a mixture of oxygen and ozone.

13. A process for the production of oxandrolone, the process comprising reacting mestanolone with ozone in the presence of hydrogen peroxide in a temperature range from about 1° C to about 50° C for about 3 hours to about 5 hours, the ozone being present in a mixture of oxygen and ozone.

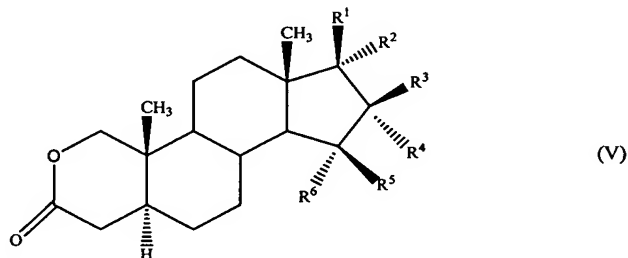
14. The process of claim 13, wherein the mestanolone is present in an aqueous solution.

15. A process for the production of a 2-oxa-3-one androstane derivative, the process comprising reacting a 3-one androstane derivative of formula (IV)



wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ , and  $R^6$  are independently selected from the following group: hydrogen,  $C_{1-10}$  alkyl,  $C_{1-10}$  ketone, phosphate,  $C_{1-10}$  alkyl carboxylate, amino, hydroxy, thiol,  $C_{1-10}$  thioalkyl,  $C_{1-10}$  alkoxy, substituted  $C_{1-10}$  alkyl, and halogen;

with ozone to form a 2-oxa-3-one androstane derivative of formula (V)



wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $R^5$ , and  $R^6$  are as above in formula (IV).

16. The process of claim 15, wherein the reaction is conducted in the presence of an organic or inorganic peroxide.

17. The process of claim 16, wherein the peroxide is hydrogen peroxide.

18. The process of claim 15, wherein the reaction is carried out in a temperature range from about 1° C to about 50° C.

19. The process of claim 15, wherein the 3-one androstane derivative of formula (IV) is reacted with ozone for about 3 hours to about 5 hours.

20. The process of claim 15, wherein the ozone that is reacted with the 3-one androstane derivative of formula (IV) is present as a mixture of oxygen and ozone.

21. The process of claim 20, wherein the reaction is conducted in the presence of hydrogen peroxide.